

Attorney Docket No.: J3671(C)  
Serial No.: 10/517,930  
Filed: August 18, 2005  
Confirmation No.: 6883

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listing of claims in the application.

#### **Listing of Claims:**

Claim 1 (Currently Amended) A hand-held domestic spraying product comprising a reservoir holding a liquid composition, a nozzle means for producing a spray from said liquid composition, a liquid transfer conduit for transfer of the liquid composition from the reservoir towards the nozzle means, a transfer conduit valve in communication with the liquid transfer conduit, an air inlet valve, an air entry chamber, a buffer chamber, an air flow control valve, an air flow channel in communication with the reservoir, an electrically powered pump for creating the force required to move the liquid composition from the reservoir through the liquid transfer conduit towards the nozzle, and a control means for activating the electrically powered pump, characterized in that the electrically powered pump is a MEMS pump comprises an array of micro-electro mechanical system pumps, wherein the micro-electro mechanical system pumps draw air from outside the spraying product into the air entry chamber through the air inlet valve which opens when the pressure in the air entry chamber is reduced by operation of the micro-electro mechanical system pumps, and wherein air is pumped by the micro-electro mechanical system pumps from the entry chamber into the buffer chamber where it is allowed to build in pressure until it is released to flow through the air flow channel and into the reservoir by opening of the air flow control valve, increasing air pressure adjacent to the liquid composition, and wherein when the transfer conduit valve is released, the liquid composition from the reservoir is forced up the liquid transfer conduit towards the nozzle means.

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Claim 2 (Currently Amended) A product according to claim 1, wherein the MEMS pump acts as an air pump resulting in an air pressure modification adjacent to the liquid composition and providing the force required to move the liquid composition from the reservoir towards the nozzle means.

Claim 3 (Currently Amended) A product according to claim 2, wherein the liquid composition has a resistivity of less than 104 ohm.cm.

Claim 4 (Currently Amended) A product according to claim 3, wherein the MEMS pump is a micro-electro mechanical system pumps are diaphragm pump pumps that is are electrostatically driven.

Claim 5 (Previously Presented) A product according to any of claims 2 to 4claim 2, wherein the MEMS pump acts as air compressor, increasing the air pressure adjacent to the liquid composition.

Claim 6 (Previously Presented) A product according to any of claims 2 to 4claim 2, wherein the MEMS pump acts to create an air stream that serves to draw the liquid composition from the reservoir using a venturi effect.

Claim 7 (Previously Presented) A product according to claim 1, comprising a pulse reduction means.

Claim 8 (Currently Amended) A product according to claim 1 comprising wherein the electrically powered pump comprises a parallel array of MEMS micro-electro mechanical sytem pumps.

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Claim 9 (Currently Amended) A product according to claim 1 comprising wherein the electrically powered pump comprises an array of MEMS micro-electro mechanical system pumps in series.

Claim 10 (Currently Amended) A product according to claim 8 wherein the electrically powered pump comprises a parallel array of MEMS micro-electro mechanical system pumps with non-synchronous pulse frequencies.

Claim 11 (Previously Presented) A product according to claim 2, comprising a buffer chamber for receiving the air from the MEMS pump.

Claim 12 (Original) A product according to claim 11, wherein the buffer chamber has a volume of at least half that of the reservoir containing the liquid composition.

Claim 13 (Previously Presented) A product according to claim 1, comprising a transfer conduit for transfer of the liquid composition from the reservoir towards the nozzle means.

Claim 14 (Original) A product according to claim 13, wherein the transfer conduit comprises one or more valves.

Claim 15 (New) A hand-held domestic spraying product comprising:

- a reservoir holding a liquid composition,
- a nozzle means for producing a spray from said liquid composition,
- a liquid transfer conduit,
- a transfer conduit valve,
- an air inlet valve,
- an air entry chamber,
- a buffer chamber,

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an air flow control valve,  
an air flow channel that leads towards the nozzle means,  
an electrically powered pump,  
and a control means for activating the electrically powered pump,

characterized in that the liquid transfer conduit communicates with the reservoir and the air flow channel and the electrically powered pump comprises an array of micro-electro mechanical system pumps that draw air from outside the spraying product into the air entry chamber through the air inlet valve which opens when the pressure in the air entry chamber is reduced by operation of the micro-electro mechanical system pumps, and wherein air is pumped by the micro-electro mechanical system pumps from the entry chamber into the buffer chamber where it is allowed to build in pressure until it is released to flow into the air flow channel toward the nozzle means by opening of the air flow control valve, and wherein the air flow channel and liquid transfer conduit are sized such that when the transfer conduit and air flow valves are open, air flow through the air flow channel toward the nozzle means draws the liquid composition through the liquid transfer conduit towards the nozzle means by a venturi effect.

Claim 16 (New) A product according to claim 15 wherein the electrically powered pump comprises a parallel array of micro-electro mechanical system pumps.

Claim 17 (New) A product according to claim 15 wherein the electrically powered pump comprises an array of micro-electro mechanical system pumps in series.

Claim 18 (New) A product according to claim 16 wherein the electrically powered pump comprises a parallel array of micro-electro mechanical system pumps with non-synchronous pulse frequencies.